

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE		PAGE OF PAGES
2. AMENDMENT/MODIFICATION NO.		3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. <i>(If applicable)</i>
6. ISSUED BY		CODE	7. ADMINISTERED BY <i>(If other than Item 6)</i>	
			CODE	
8. NAME AND ADDRESS OF CONTRACTOR <i>(No., street, county, State and ZIP Code)</i>		(X)	9A. AMENDMENT OF SOLICITATION NO.	
			9B. DATED <i>(SEE ITEM 11)</i>	
			10A. MODIFICATION OF CONTRACT/ORDER NO.	
			10B. DATED <i>(SEE ITEM 13)</i>	
CODE		FACILITY CODE		

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

- ☐ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☐ is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment number. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

**12. ACCOUNTING AND APPROPRIATION DATA *(If required)***

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS,  
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

(X)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: <i>(Specify authority)</i> THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES <i>(such as changes in paying office, appropriation date, etc.)</i> . SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER <i>(Specify type of modification and authority)</i>

**E. IMPORTANT:** Contractor ☐ is not, ☐ is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

**14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)***

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER <i>(Type or print)</i>		16A. NAME AND TITLE OF CONTRACTING OFFICER <i>(Type or print)</i>	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____	16C. DATE SIGNED
<i>(Signature of person authorized to sign)</i>		<i>(Signature of Contracting Officer)</i>	

NAME OF OFFEROR OR CONTRACTOR

ITEM NO.	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT

**1. QUESTION:**

Does the tow tractor as currently designed and constructed comply with all regulations and standards as identified on pages 2 of 12 and 3 of 12 in Attachment #4 (Statement of Work)?

**ANSWER:**

The requirements regarding the electrical system were not specified to this level, and potential offerors shall assume that on-vehicle wiring and components may not be in compliance. However, no testing or verification has been performed to verify this. The offerer may verify any outstanding questions during a visual inspection of the vehicle. The offerer shall be aware that any excessive modification to the existing electrical system may require re-certification of the vehicle, which is not permissible.

**2. QUESTION:**

The solicitation states that the tow tractors are non-functioning. Please specifically identify the components that the Government believes caused the tractors to be non-functional.

**ANSWER:**

The tow tractor on which the system upgrade will be performed has a non-functioning diesel engine. It is uncertain what caused this. The other tractor has a non-functioning battery/electrical system. No diagnostics were performed to determine the failure modes. The base chassis and non-modified components all met the applicable standards that the original vehicle was manufactured to.

**3. QUESTION:**

When was the last time the tractors were operational? How many hours of operation have they accumulated since initial delivery to the Government?

**ANSWER:**

The last time the tractors were operational was on June 2, 2002. VIN No. 99L518 has accumulated 166 hours of operation. VIN No. 00L00047 has accumulated 178 hours of operation.

**4. QUESTION:**

When the tractors were operational, was their performance satisfactory to the Government? If not, why?

**ANSWER:**

The performance of the tractors was mainly satisfactory to the Government in their initial application. Reliability was the major issue, as the diesel fuel cut-off solenoid burned out several times and caused frequent down time. However, this component has since been repaired. The on-board chargers, motor/alternator and poor battery management were the

problem areas. There was also some concern with wet weather operation, which would seem to indicate a lack of compliance or conformity with the listed UL, NFPA, and SAE codes and standards.

**5. QUESTION:**

What is the model number of the Siemens 100kW drive motor?

**ANSWER:**

Siemens Drive Motor PH224 100KW

**6. QUESTION:**

What are the reduction ratios (High and Low) of the Spicer Model 802-71? What is the reduction ratio(s) of the Spicer model 420S-74 Axles (F/R)?

**ANSWER:**

This is a standard Entwhistle gearbox, which is described in the Entwhistle manual. Additional information regarding this component can be obtained from Entwhistle. The offerer should be reminded that modification of these components is not permissible. This will require recertification of the tow tractor, and will cause a deviation from the standard platform.

**7. QUESTION:**

Is there a 24 Vdc requirement on the vehicle or are all low-voltage devices supplied with 12 Vdc? Is the existing alternator 12 Vdc or 24 Vdc? What is its rated output? What is the make and model number?

**ANSWER:**

The system is a 12-volt system, and there are no 24Vdc requirements. The power is supplied by the Siemens inverter.

**8. QUESTION:**

How is the power supplied to the three accessory drive motors (power steering drive motor, air compressor drive motor, and alternator drive motor)? Is this high-voltage power directly from the battery pack or from a DC/DC converter? If so, please state voltage converter data. Is it AC power from an inverter? If so, please state power type (voltage, phases, Hertz) and inverter data. Is the power supplied from the 12 Vdc circuit?

**ANSWER:**

The power is controlled via the Siemens controller, Siemens Drive 611, model 6sn 1123-1AA000-OKAI. 576Vdc Nom is applied directly to the Siemens system then converted to AC for accessories. The 12Vdc system is primarily for chassis systems and not hybrid specific systems other than logic circuit source. Potential offerors shall be reminded that modification to these systems is beyond the scope of this enhancement. It is expected

that the turbine provide 480Vac to the rectifier circuit as currently designed. Any other enhancements to the drive system are at the risk of the contractor to validate.

**9. QUESTION:**

What are the dimensions (LxWxH) or the electronics boxes in the rear of the vehicle?

**ANSWER:**

The answer to this question can be obtained by observing the vehicle during a site visit. The drawings in the technical manual do not provide dimensions.

**10. QUESTION:**

What equipment is installed within the boxes and what is the approximate space claim (e.g. batteries 50%, battery management 20%, power electronics 30%, etc)?

**ANSWER:**

The answer to this question can be obtained by observing the vehicle during a site visit. Very qualitatively, the majority of the compartment is for batteries, and a small amount is for the controllers and working space.

**11. QUESTION:**

What is the model number of the 12 Vdc Concord battery?

**ANSWER:**

PS-12000 PowerSonic. This component interfaces with the Aerovironment battery management equipment referenced in No. 12 below.

**12. QUESTION:**

Please clarify the requirement for on-board grid-connected charging. Within Attachment #4 (Statement of Work), several sections appear to provide conflicting information. Under the GFE section an "on-site charging station" is to be provided by the Government. Paragraph 1.3 requires the integration of grid charging technology into the tow tractor. Paragraph 3.7 requires the integration of a "SAE compliant grid charging system into the tow tractor". Is the GFE charging station SAE compliant per paragraph 3.7? Is it the intent of the Government to install the GFE charging station onto the vehicle? In apparent contradiction to the above, in the section titled Main Vehicle Characteristics, Coherent Power LTD model HXFC5000 battery chargers are identified as equipment already integrated on the vehicle. Do the Coherent chargers meet the requirement for grid charging as identified in 1.3 and 3.7? Are they functional? If not, is it the Governments intent to remove the Coherent chargers and replace them with the GFE equipment?

**ANSWER:**

The vehicle will need to interface and communicate with the on-site Aerovironment 30 kilowatt on-road posicharger MVS with Burton connector. The onboard battery management system is composed of Aerovironment components. These components will be installed by the Government. The model name of the battery management system is "Energy System Controller", rev-e smart guard. Any work that the offeror performs must integrate with the on-board battery management system and meet SAE standards J19850 or J2293. The GFE is SAE compliant. The battery chargers should not have to be replaced. The equipment will have to be used and be compliant with any work that the offerer performs. The chargers are functional. The GFE functions with the chargers, it does not replace them. Any additional information regarding Aerovironment components should be obtained by contacting David Francis at Aerovironment (626) 357-9983 ext530.

**13. QUESTION:**

With regard to the Data Collection system requirements identified in sections 1.5, 2.4, 3.14 would it be acceptable to provide the Government with bi-weekly reports containing the data identified in 2.4, using a consigned rather than a procured data system?

**ANSWER:**

It is acceptable to use a consigned data system.